Pioneer

Service Manual

ORDER NO.
ARP3525

FLAT SCREEN TV

PDP-LX509A

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
PDP-LX509A	YP1	AC 240 V	

This service manual should be used together with the following manual(s).

Model No.	Order No.	Remarks
PDP-LX509A/YP	ARP3513	EXPLODED VIEWS, BLOCK DIAGLAM, ADJUSTMENT, etc.

To distinguish these models from other model, confirm the serial number.

	Model Name	Serial No.	Order No.
This Model	PDP-LX509A/YP1	&&&&1XXXXX&&	ARP3525
Other Model	PDP-LX509A/YP	&&&&0XXXXX&&	ARP3513

&: Alphabetics X: Numerics

There are two type of different models in PDP-LX509A. Differences between these models are using different characteristic of glass panel. The DIGITAL Assy and Service Panel Assy between them are different. Therefore, when these parts are to be replaced, be sure to use the parts that are specified in each manual. If the parts of this model are accidentally used in the other model, it may result in abnormal electrical discharge or reduction in life expectancy of the Panel.

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ⓒ**PIONEER CORPORATION 2008**

T-ZZA-001 NOV. 2008 Printed in Japan

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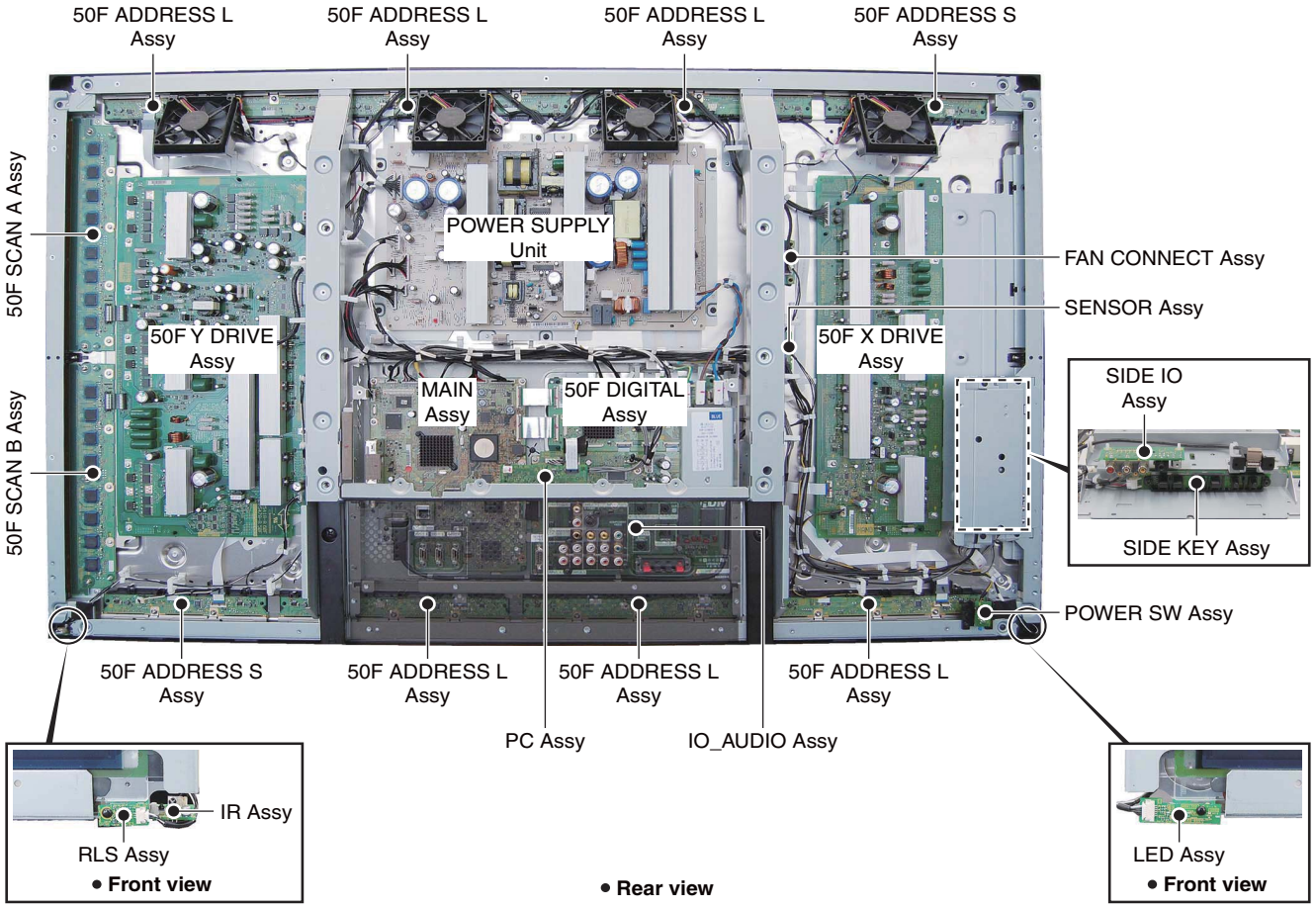
1. BASIC ITEM FOR SERVICE
1.1 PCB LOCATION

Note: The wiring shown in the photo is different from the actual wiring, because the product in the photo is a prototype. Upon servicing, be sure to restore the original wiring of the unit after repair work.



NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*

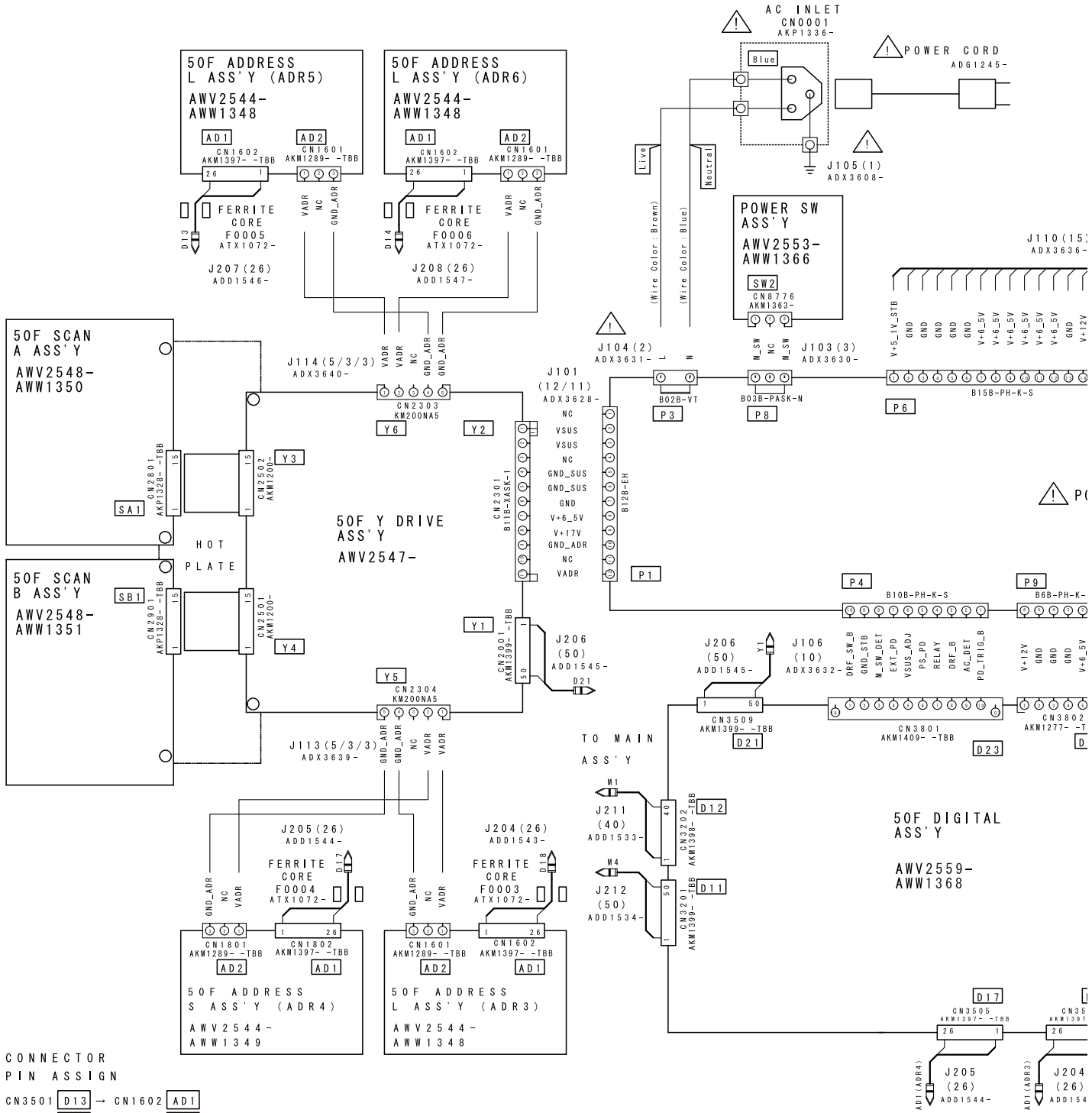
LIST OF ASSEMBLIES

Mark	No.	Description	Part No.
NSP		50F ADDRESS L ASSY	AWW1348
NSP		50F ADDRESS S ASSY	AWW1349
NSP		50F SCAN A ASSY	AWW1350
		└ IC2801 - IC2808	AN16184A
NSP		50F SCAN B ASSY	AWW1351
		└ IC2901 - IC2908	AN16184A
		SENSOR ASSY	AWW1340
*		50F DIGITAL Assy	AWW1368
		50F X DRIVE ASSY	AWV2546
		50F Y DRIVE ASSY	AWV2547

Mark	No.	Description	Part No.
⚠		MAIN ASSY	AWV2557
		IO_AUDIO ASSY	AWW1355
		SIDE IO ASSY	AWW1356
		PC ASSY	AWW1359
		SIDE KEY ASSY	AWW1361
		LED ASSY	AWW1362
		IR ASSY	AWW1363
		FAN CONNECT ASSY	AWW1364
		RLS ASSY	AWW1365
		POWER SW ASSY	AWW1366
⚠		POWER SUPPLY UNIT	AXY1200
*		PDP SERVICE ASSY 509FE	AWU1367

*: These Assys are different parts from PDP-LX509A/YP.

2. BLOCK DIAGRAM
2.1 OVERALL WIRING DIAGRAM



CONNECTOR PIN ASSIGN

CN3501	D13	→ CN1602	AD1
CN3502	D14	→ CN1602	AD1
CN3503	D15	→ CN1602	AD1
CN3504	D16	→ CN1802	AD1
CN3505	D17	→ CN1802	AD1
CN3506	D18	→ CN1602	AD1
CN3507	D19	→ CN1602	AD1
CN3508	D20	→ CN1602	AD1

1→26. V+10V	14→13. CLKN		
2→25. V+10V	15→12. CLKP		
3→24. GND	16→11. GND		
4→23. GND	17→10. DN		
5→22. AN	18→ 9. DP		
6→21. AP	19→ 8. GND		
7→20. GND	20→ 7. GND		
8→19. BN	21→ 6. V+3_3V		
9→18. BP	22→ 5. V+3_3V		
10→17. GND	23→ 4. V+3_3V		
11→16. CN	24→ 3. GND		
12→15. CP	25→ 2. LS1		
13→14. GND	26→ 1. ADR_PD		

CN2501 Y4 ↓ CN2901 SB1

1. VH	
2. VH	
3. NC	
4. NC	
5. GNDH_VH	
6. GNDH_VH	
7. SI	
8. GNDH_DIG	
9. CLK_L	
10. LE	
11. OC1	
12. OC2	
13. CLR	
14. GNDH_RL	
15. IC5V	

CN2502 Y3 ↓ CN2801 SA1

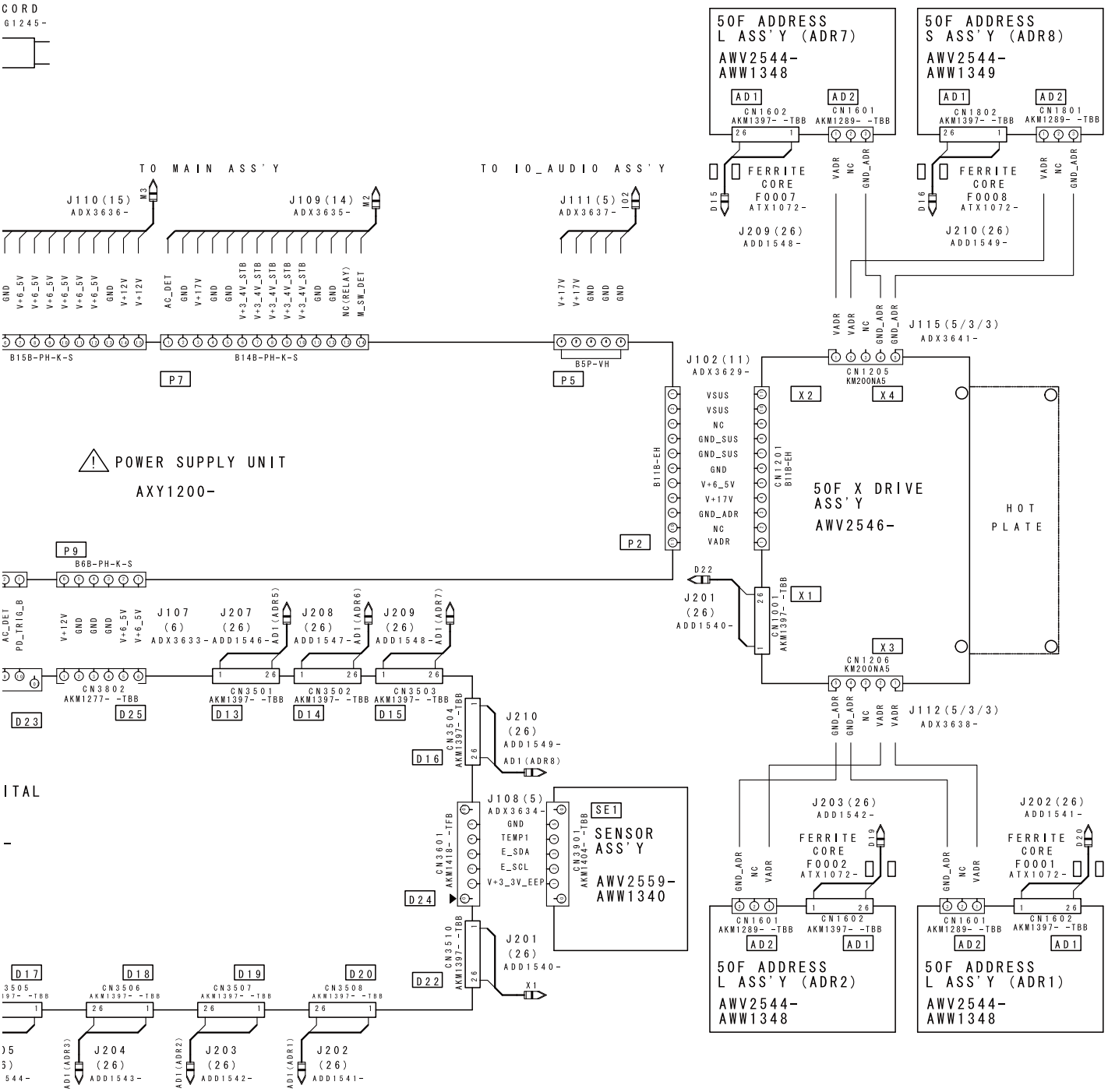
1. VH	
2. VH	
3. NC	
4. NC	
5. GNDH_VH	
6. GNDH_VH	
7. CLK_H	
8. GNDH_DIG	
9. LE	
10. OC1	
11. OC2	
12. CLR	
13. SI	
14. GNDH_RH	
15. IC5V	

CN3509 D21 → CN2001 Y1

1→50. YCN_PD	18→33. SUS_MUTE	35→16. YRSV4
2→49. VYPRST_ADJ	19→32. YSNOFS	36→15. SI
3→48. SCAN_PD	20→31. GND	37→14. CLK_H
4→47. GND	21→30. YRST-D	38→13. GND
5→46. YDD_PD	22→29. YSUS_LMSK	39→12. LE
6→45. YOFS_ADJ	23→28. YSUS_HMSK	40→11. OC1
7→44. YSUS_PD	24→27. GND	41→10. OC2
8→43. GND	25→26. YSUS_D	42→ 9. CLR
9→42. YRSV1	26→25. YPR-U	43→ 8. GND
10→41. YRSV2	27→24. YSUS_G	44→ 7. VKNOFS4_ADJ
11→40. GND	28→23. GND	45→ 6. VKNOFS3_ADJ
12→39. YKNOFS4	29→22. YSUS_U	46→ 5. VKNOFS1_2_ADJ
13→38. YKNOFS3	30→21. YRSV3	47→ 4. GND
14→37. YKNOFS2	31→20. YSUS_B	48→ 3. SCN5V_PD
15→36. YKNOFS1	32→19. ESW	49→ 2. YDRV_PD(GND)
16→35. GND	33→18. GND	50→ 1. PSW2
17→34. YSOFT-G	34→17. CLK_L	

CN3201 D11 → CN4101 M4

1→50. V+3_4V_ACT2	18→33. R8_EVN	35→16. G2_
2→49. NC	19→32. R7_EVN	36→15. G1_
3→48. GND	20→31. R6_EVN	37→14. GO_
4→47. MULTI_OE	21→30. R5_EVN	38→13. GND
5→46. RELAY2	22→29. R4_EVN	39→12. B9_
6→45. REQ_MD	23→28. R3_EVN	40→11. B8_
7→44. RXD_MD	24→27. R2_EVN	41→10. B7_
8→43. TXD_MD	25→26. R1_EVN	42→ 9. B6_
9→42. GND	26→25. R0_EVN	43→ 8. B5_
10→41. THEATER	27→24. GND	44→ 7. B4_
11→40. VD	28→23. G9_EVN	45→ 6. B3_
12→39. HD	29→22. G8_EVN	46→ 5. B2_
13→38. DE	30→21. G7_EVN	47→ 4. B1_
14→37. GND	31→20. G6_EVN	48→ 3. BO_
15→36. CLK	32→19. G5_EVN	49→ 2. GND
16→35. GND	33→18. G4_EVN	50→ 1. MOD
17→34. R9_EVN	34→17. G3_EVN	



- When ordering service parts, be sure to refer to “EXPLODED VIEWS and PARTS LIST” or “PCB PARTS LIST”.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

CN3202 D12 → CN4105 M1

1→40. MODE_B	11→30. R3_ODD	21→20. G4_ODD	31→10. B5_ODD
2→39. SQ_SEL	12→29. R2_ODD	22→19. G3_ODD	32→ 9. B4_ODD
3→38. GND	13→28. R1_ODD	23→18. G2_ODD	33→ 8. B3_ODD
4→37. GND	14→27. R0_ODD	24→17. G1_ODD	34→ 7. B2_ODD
5→36. R9_ODD	15→26. GND	25→16. G0_ODD	35→ 6. B1_ODD
6→35. R8_ODD	16→25. G9_ODD	26→15. GND	36→ 5. B0_ODD
7→34. R7_ODD	17→24. G8_ODD	27→14. B9_ODD	37→ 4. GND
8→33. R6_ODD	18→23. G7_ODD	28→13. B8_ODD	38→ 3. GND
9→32. R5_ODD	19→22. G6_ODD	29→12. B7_ODD	39→ 2. GND
10→31. R4_ODD	20→21. G5_ODD	30→11. B6_ODD	40→ 1. MODE_C

CN3510 D22 → CN1001 X1

1→26. XSUS_B	14→13. GND
2→25. GND	15→12. XSOFT_D
3→24. XSUS_U	16→11. GND
4→23. GND	17→10. SUS_MUTE
5→22. XSUS_D	18→ 9. GND
6→21. GND	19→ 8. XKOFS1_ADJ
7→20. XSUS_G	20→ 7. XKOFS2_ADJ
8→19. GND	21→ 6. GND
9→18. XPRST	22→ 5. XDD_PD
10→17. GND	23→ 4. PSW2
11→16. XKOFS1	24→ 3. XRSV1
12→15. GND	25→ 2. Psize
13→14. XKOFS2	26→ 1. XSUS_PD

OVERALL DIAGRAM
PDP-LX509A

3. DIAGNOSIS

DIAGNOSIS for PDP-LX509A/YP1 is the same as YP except for the following:

3.1 DETAILS OF EACH COMMANDS

[1] QS1 (PANEL STATUS)

Model information and version information are returned.

Command Format	Effective Operation Modes	Function	Remarks
[QS1]	Every Time	Output of status	Return data: 3 (ECO) + 112 (DATA) + 2 (CS) = 117 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QS1
1	Resolution/Size	1 byte	F
2	Panel Generation	1 byte	9
3	Destination	1 byte	*
4	Grade	1 byte	*
5	Panel Product Form	1 byte	A
6	Boot version of Module microcomputer	3 byte	-01A
7	Program version of Module microcomputer	8 byte	-01A ' ' ' '
8	Boot version of sequence processor	3 byte	-01Z
9	Program version of sequence processor	8 byte	-01Z ' ' ' '
10	Panel information	8 byte	G9_50F_2
11	Derivative operation identification	1 byte	*
12	Reserved (panel section)	7 byte	*******
13	, (comma)	1 byte	,
14	MTB generation	1 byte	9
15	MTB destination	1 byte	A
16	MTB grade	1 byte	H
17	MTB product form	1 byte	B
18	Program version of IF microcomputer	8 byte	-01A
19	Boot version of IF microcomputer	4 byte	01A
20	Program version of Main microcomputer	8 byte	-01A
21	Boot version of Main microcomputer	4 byte	01A
22	Common version of ASIC	8 byte	-01A
23	Boot version of ASIC	8 byte	01A
24	PRS version of ASIC	8 byte	-01A
25	PIC version of ASIC	8 byte	-01A
26	Common version of the Digital Tuner	8 byte	-0A
27	Boot version of the Digital Tuner	4 byte	01A
CS	2 Byte	2 byte	4A

11: Derivative Operation Identification	
*	Standard model operation
1	Derivative model operation

14: MTB Generation	
9	G9

15: MTB Destination	
A	North America
C	China
E	Europe
G	General
J	Japan
U	Australia

16: MTB Grade	
H	Elite/One body Europe HD /System Europe HD/One body Australia
T	Regular/One body Europe SD
D	Derivative Model
*	No Grade (Japan/General/China)

17: MTB Product Form	
B	One body model
S	System model

1: Resolution/Size	
F	50-FHD (1920*1080)
G	60-FHD (1920*1080)

2: Panel Generation	
9	G9

3: Destination	
*	Commonness

4: Grade	
*	Commonness
Z	Evaluation

5: Panel Product Form	
A	One body/monitor model
S	System model

10: Panel Information (8 Byte)		
1 to 2nd byte	G9	Generation information
4 to 5th byte	50	50 inch
	60	60 inch
6th byte	F	FHD
8th byte	3	50 inch 2nd PLANT (Reserved)
	2	50 inch 2nd PLANT
	1	50 inch 1st PLANT
	'	Others

' = space

4. SERVICE FACTORY MODE

SERVICE FACTORY MODE for PDP-LX509A/YP1 is the same as YP except for the following:

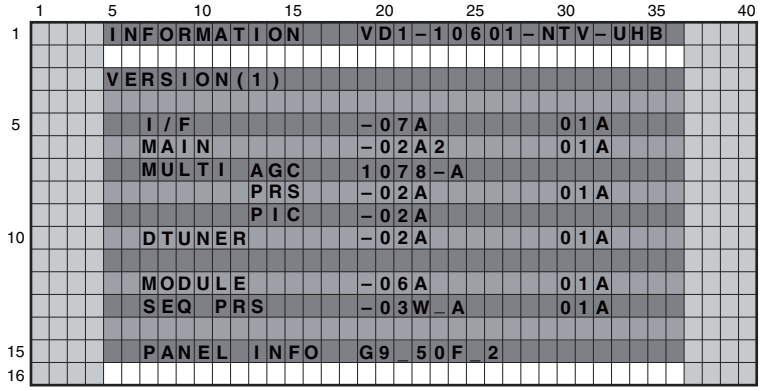
4.1 DETAILS OF FACTORY MENU

[1] INFORMATION

■ Operation items

No.	Function	Content	RS-232C Command
[1-1]	VERSION (1)	The Flash memory versions for each device are displayed.	QS1
[1-2]	VERSION (2)	The Flash memory versions for each device are displayed.	QSE
[1-3]	MAIN NG	The Shutdown NG information and Event Times in the MTB section are displayed.	QNG
[1-4]	TEMPERATURE	The present temperature and the FAN rotating status are displayed.	–
[1-5]	HOUR METER	The accumulation power ON count of the panel is displayed.	–
[1-6]	HDMI SIGNAL INFO 1	The status registers of HDMI receiver are displayed with hexadecimal.	–
[1-7]	HDMI SIGNAL INFO 2		
[1-8]	VDEC SIGNAL INFO 1	Display the signal information input to VDEC	–
[1-9]	VDEC SIGNAL INFO 2		

[1-1] VERSION (1)



Display Item	Meaning	Display Example (Program)	Display Example (Boot)
I/F	I/F microcomputer	-07A	01A
MAIN	Main microcomputer	-02A2	01A
MULTI AGC	AGC data of Multi processor	1078-A	
MULTI PRS	Program of Multi processor	-02A	01A
MULTI PIC	Picture quality data of Multi processor	-02A	
DTUNER	Software program of the Digital tuner	-02A	01A
MODULE	Module microcomputer	-06A	01A
SEQ PRS	Program of Sequence processor	-03W	01A
PANEL INFO	It displays the generation of the panel, inchage and the type of the panel. For details on display values and setting, see “10: Panel information in 5.9 [1] QS1 (PANEL STATUS).”	–	–

5. EACH SETTING AND ADJUSTMENT

EACH SETTING AND ADJUSTMENT for PDP-LX509A/YP1 is the same as YP except for the following:

5.1 ADJUSTMENT REQUIRED WHEN THE UNIT IS REPAIRED OR REPLACED

■ When any of the following assemblies is replaced

Service Panel Assy	➡	Refer to “5.2 ADJUSTMENT WHEN THE SERVICE PANEL ASSY IS REPLACED”.
OTHER assemblies	➡	Refer to “8.1 ADJUSTMENT REQUIRED WHEN THE UNIT IS REPAIRED OR REPLACED” on ARP3513.

■ When any of the following parts is replaced

Notes on replacing parts

For the parts described in the list below, replacement is required for the whole Assy, not only the defective part.
If any part listed below is identified as defective and needs replacement, replace the whole Assy, and make necessary adjustments after replacement.

PCB Assy No.	Assy Name	Parts that Require Whole-Assy Replacement		
		Ref No.	Function Name	Part No.
AWV2557	MAIN Assy	IC5002	EEPROM	BR24L02FV-W
		IC5003	EEPROM	BR24L02FV-W
		IC5004	EEPROM	BR24L02FV-W
		IC6001	System IC	BCM7404XKPB11G
		IC7004	EEPROM	BR24L64F-W
		IC6201	DDR SDRAM	EDD5116AFTA-5B-E
		IC6202	DDR SDRAM	EDD5116AFTA-5B-E
		IC6203	DDR SDRAM	EDD5116AFTA-5B-E
		IC6204	DDR SDRAM	EDD5116AFTA-5B-E
		IC6403	Flash ROM	AGC1084
		IC6701	Flash ROM	AGC1079
		IC6811	Flash UCOM	AGC1072
		IC7202	Flash ROM	AGC1077
AWV2559	DIGITAL Assy	IC3302	Flash ROM	AGC1096
		IC3601	Flash UCOM	AGC1095
AWW1359	PC Assy	IC8802	EEPROM	BR24L01AFJ-W
AWW2546	X DRIVE Assy	• Parts of X D-D CON BLOCK		
AWW2547	Y DRIVE Assy	• Parts of Y VF D-D CON BLOCK 1 • Parts of Y MAIN D-D CON BLOCK 1 • Parts of Y MAIN D-D CON BLOCK 2		

Reason: The whole Assy must be replaced, because adjustments and data rewriting for the Assy at the level of production line are required.

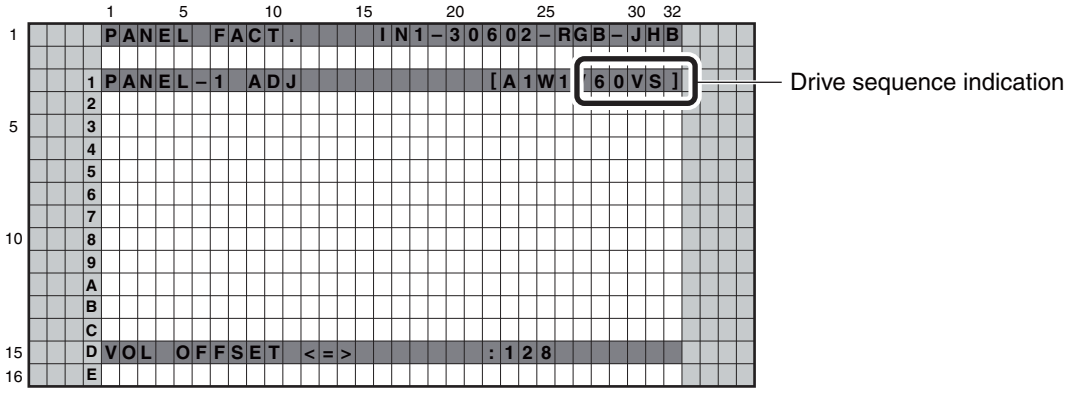
5.2 ADJUSTMENT WHEN THE SERVICE PANEL ASSY IS REPLACED

After the panel is replaced with one for service, voltage margin adjustment is required.

[Preparation]

Basically, voltage margin adjustment is performed using the Panel Factory menu.
After the panel is replaced and the unit is turned on, clear the pulse meter first.
For details on how to clear the pulse meter, see "8.3 HOW TO CLEAR HISTORY DATA" on ARP3513.

∗1: As various corrections are made referring to the pulse-meter count to calculate how long the panel has been used, if adjustment of the panel for service is performed without clearing the pulse-meter count, proper adjustments will not be performed.
∗2: The drive sequence for Video 60-Hz is used for adjustment. When adjustment is made using the Panel Factory menu, the current drive sequence is displayed on the screen, as shown in the figure below. Make sure that 60VS is always indicated during adjustment.



Example of the On-Screen display during Panel Factory mode

[Supplement]

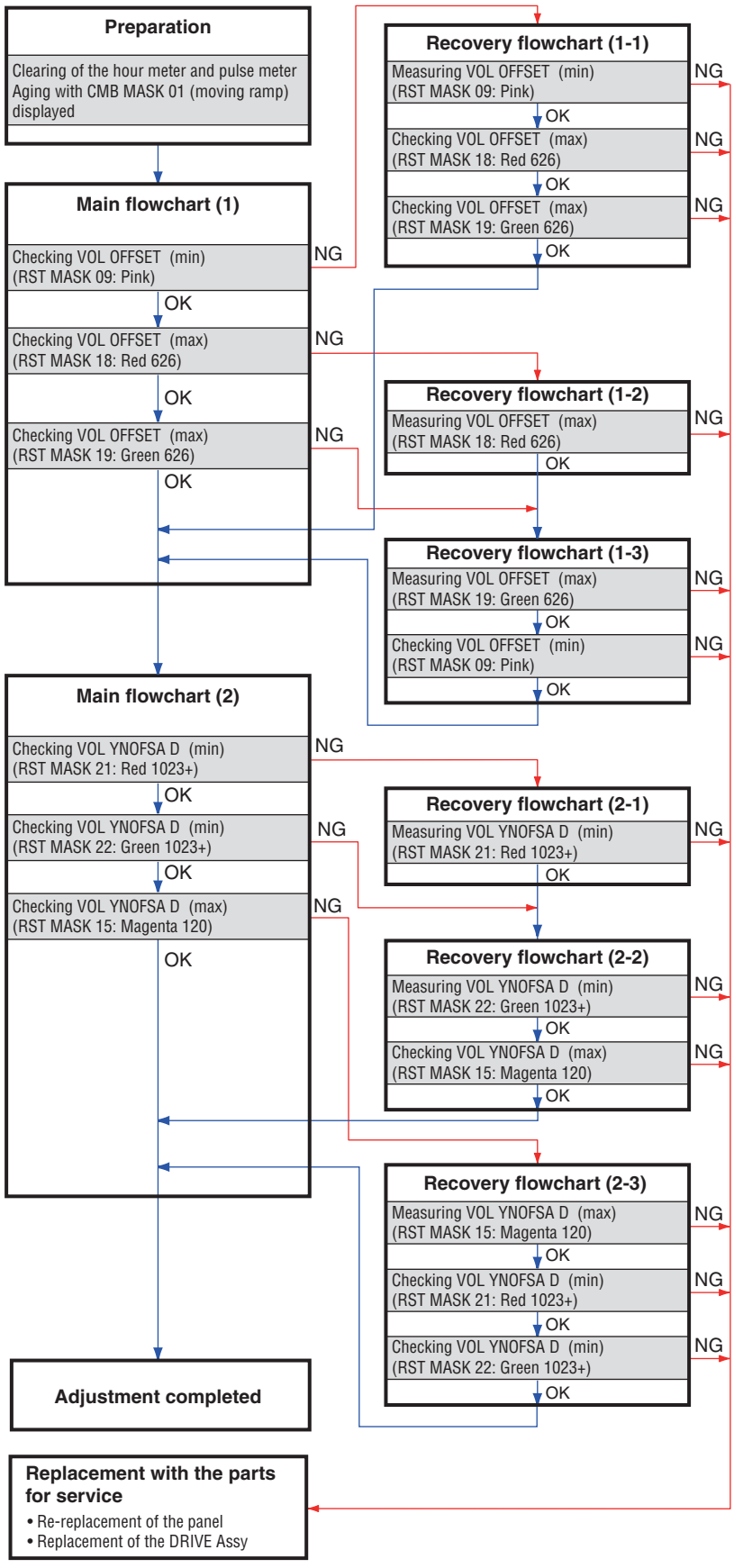
In the "PANEL-1ADJ" layer, the Panel White Balance value is reset to default, Panel Gamma is set to Straight, Noise is set to OFF, LUT mode is set to ON and Reset active control is set to OFF.
If adjustment is performed using RS232C commands, unlike the case of Factory menu operation, adjustments are not interlocked. Therefore, settings must be performed individually, by issuing commands. (See the section on preparations before adjustment.)

Note

Two types of 9G 50-inch panels exist for this destination. During panel replacement, if a different type of panel is attached by mistake, lighting of cells is not executed properly, and life adjustment cannot be done properly.
Before performing adjustment after panel replacement, be sure to confirm that the new panel for service is an appropriate panel and that the adjustment flowchart is suitable for the panel.

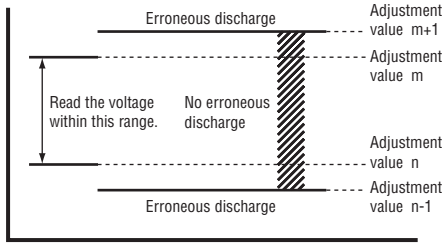
[How to confirm the type of the panel]
- Check the serial number (See the note described on the cover of this manual.)
- Check on the Factory menu that the PANEL INFO item is G9_50F_2.
- Check by issuing the QS1 command that “Panel information” is “G9_50F_2.”

Overview



Range of margin measuring

Read the voltage within the hysteresis (stricter value).



Definition of limits for the voltage margins (abnormal lit/dead cells)

Abnormal lit cells:

- Five or fewer abnormal cells on the whole screen
- Two or fewer abnormal cells within a radius of 1 cm

Abnormal dead cells

- Fifteen or fewer abnormal cells on the whole screen
- Two or fewer abnormal cells within a radius of 1 cm

*: Abnormal cells visually recognizable at a distance of 1 meter from the panel must be counted.
*: Cells displayed abnormally for less than one second are not counted as abnormal cells.

Definition of tones for the measuring signals

FHD signal (1920*1080)/Video 60-Hz sequence /Dither: ON, L dither: ON, noise: OFF

Pink	RST MASK 09 (R 1023 /G 626 /B 1023)
Magenta 120	RST MASK 15 (R 120 /G 0 /B 120)
Red 626	RST MASK 18 (R 626 /G 0 /B 0)
Green 626	RST MASK 19 (R 0 /G 626 /B 0)
Blue 626	RST MASK 20 (R 0 /G 0 /B 626)
Red 1023+	RST MASK 21 (R 1023 /G 120 /B 120)
Green 1023+	RST MASK 22 (R 120 /G 1023 /B 120)
Blue 1023+	RST MASK 23 (R 120 /G 120 /B 1023)

Interlocked settings for Voltages Vyknofs1/3/4

For the 9th-generation PDPs, interlocked setting for Voltages Vyknofs1/3/4 is available on the Factory menu or with RS232C commands, for easier adjustment. Therefore, in the adjustment flowchart, the interlocked setting function is used. (Individual setting for each adjustment value is also possible, as in the conventional setting methods.

Set Voltage	Factory Menu	Command
Vyknofs1 individual	VOL YNOFS1 D	[V1F]
Vyknofs3 individual	VOL YNOFS3 D	[V3F]
Vyknofs4 individual	VOL YNOFS4 D	[V4F]
Vyknofs1,3,4 interlocked	VOL YNOFSA D	[VYF]

Note:

- The initial value for the interlocked setting value is 128, including for factory preset values.
- See "[3] DRIVE ASSY" of "5.2 DIAGNOSIS FLOWCHART OF FAILURE ANALYSIS" for calculation of actually used voltage values.

Preparation before adjustment

[Replacement with the panel for service is completed.]

Procedures for resetting corrections for change over time

- Turn the unit on. / [PON]
- Enter Factory mode. / [FAY]
- Set PM/B1-B5 to CLEAR (to clear the pulse meter). / [CPM]
- Set HR-MTR to CLEAR (to clear the hour meter). / [CHM]
- Turn the unit off. / [POF]

* To reflect the results of log clearing for each correction function, the unit must be turned off then back on again. Before adjustment, be sure to turn the unit off then back on again.

Procedures for stabilizing the panel before adjustment

- Turn the unit on. / [PON]
- Enter Factory mode. / [FAY]
- Enter the tentative setting value of the replacement panel

Setting Item	Tentative Setting Value
VOL SUS / [VSU ***]	128
VOL OFFSET / [VOF ***]	VOF indication value
VOL RST P / [VRP ***]	VRP indication value
VOL XPOFS1 / [VX1 ***]	085
VOL XPOFS2 / [VX2 ***]	063
VOL YNOFS1 D / [V1F ***]	V1F indication value
VOL YNOFS3 D / [V3F ***]	V3F indication value +0
VOL YNOFS4 D / [V4F ***]	V4F indication value
VOL YNOFSA D / [VYF ***]	128

Note: "+0" shows α.

- Display CMB MASK 01 (moving ramp). / [MKC S01]
- Select Video 60-Hz sequence. / [VFQ S03]
- Perform aging for 30 minutes.

Indication example of the adjustment label of service panel

AWU1359 Data VOF=113
VRP=018 V1F=138 V3F=128+α
V4F=149 Hour Meter_ _ _ _ _ _ _ _ _ _ H
Data 08/02/28 Chassis CXX99999
Time 18:27 Pnl FD4A0808100123

Note: The symbol "α" denotes the adjustment value plus 0.

* Each setting value described on the adjustment label denotes an indicated data value but not a real voltage value. Therefore, just enter the data value as a setting value.

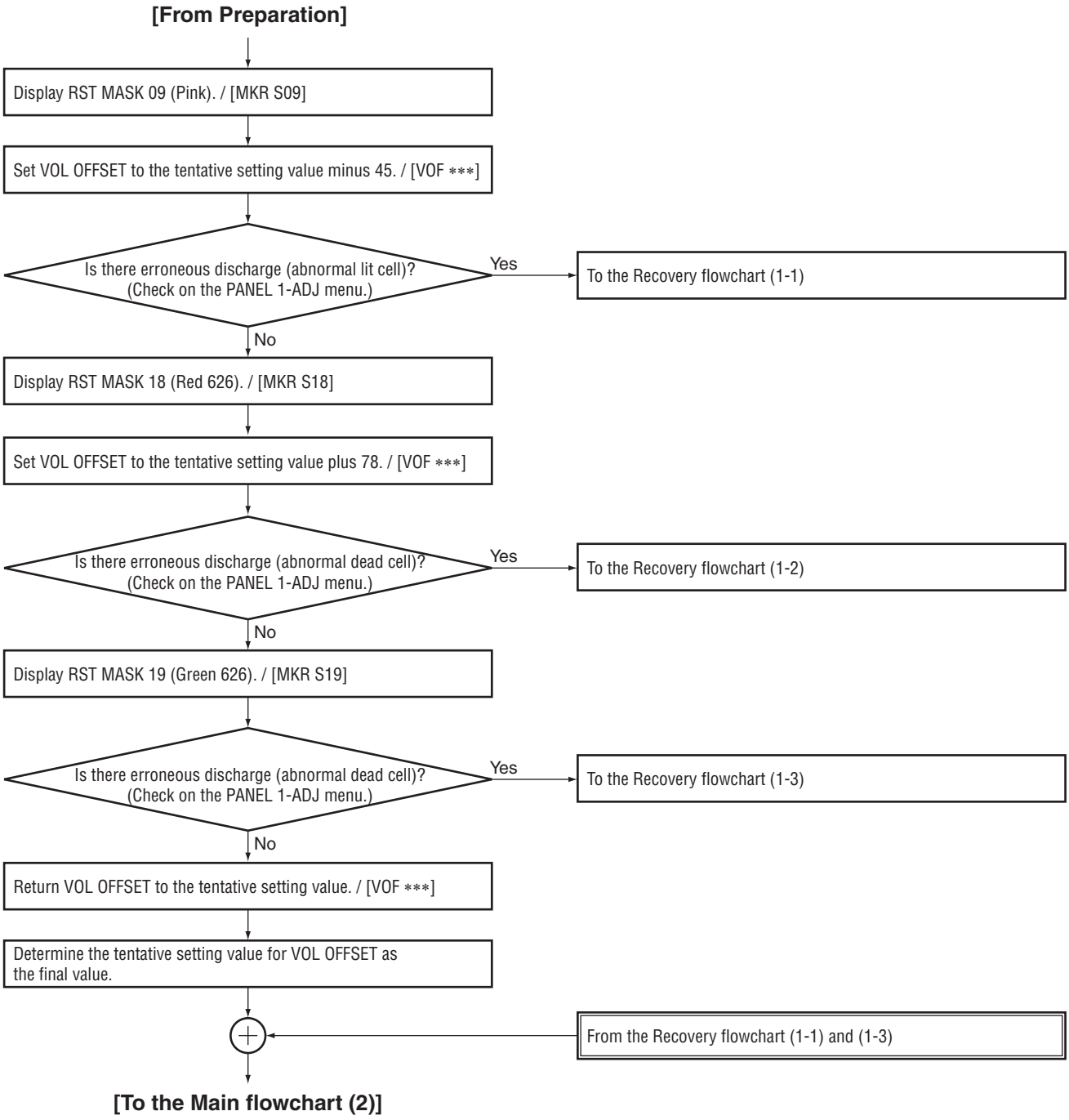
* To store the VFQ S03 command in memory, transmit it after displaying the mask.

[To the Main flowchart (1)]

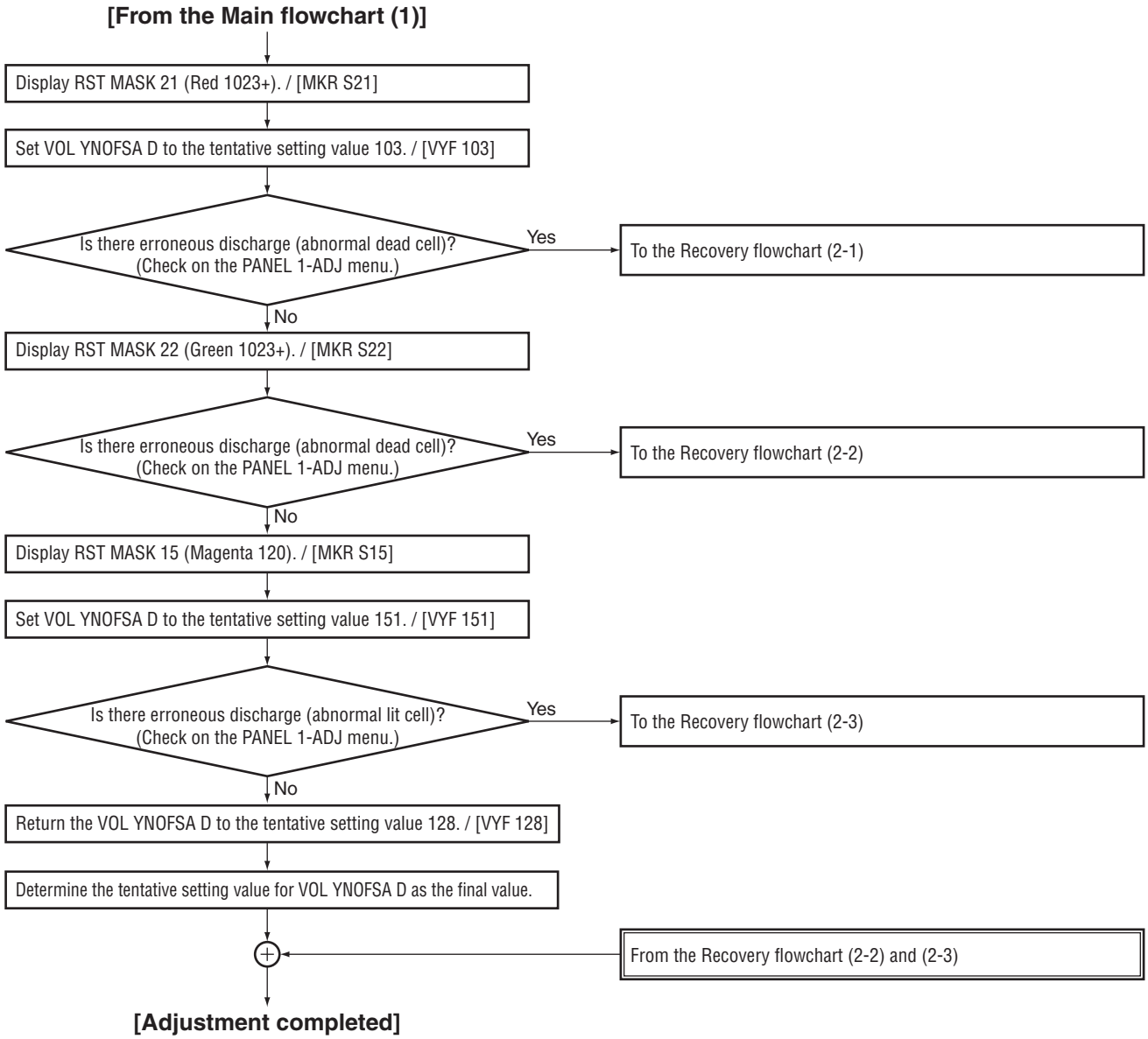
Note:
* When you perform the adjustment with RS232C commands, issue the following commands in addition.
* If the unit is shut down in the middle of performing the adjustment flowchart, reissuing of the command is required.

[PAV S00] : To set panel drive mode to Factory
[VFQ S03] : To set Drive Sequence to Video 60-Hz
[SQM S01] : To set Drive Sequence to Video
[WBI S01] : To temporarily reset the Panel WB adjustment value to default (WBI S00 cancels this setting.)
[PGR S00] : To set the gamma R value to that for Factory mode
[PGG S00] : To set the gamma G value to that for Factory mode
[PGB S00] : To set the gamma B value to that for Factory mode
[DIZ S03] : Dither ON, L dither ON, noise OFF.
[$1800000001] : LUT mode ON

Main flowchart (1)...Checking VOL OFFSET


[From Preparation]
Display RST MASK 09 (Pink). / [MKR S09]
Set VOL OFFSET to the tentative setting value minus 45. / [VOF ***]
Is there erroneous discharge (abnormal lit cell)? (Check on the PANEL 1-ADJ menu.)
Yes
To the Recovery flowchart (1-1)
No
Display RST MASK 18 (Red 626). / [MKR S18]
Set VOL OFFSET to the tentative setting value plus 78. / [VOF ***]
Is there erroneous discharge (abnormal dead cell)? (Check on the PANEL 1-ADJ menu.)
Yes
To the Recovery flowchart (1-2)
No
Display RST MASK 19 (Green 626). / [MKR S19]
Is there erroneous discharge (abnormal dead cell)? (Check on the PANEL 1-ADJ menu.)
Yes
To the Recovery flowchart (1-3)
No
Return VOL OFFSET to the tentative setting value. / [VOF ***]
Determine the tentative setting value for VOL OFFSET as the final value.
From the Recovery flowchart (1-1) and (1-3)
[To the Main flowchart (2)]

Main flowchart (2)...Checking VOL YNOFSA D

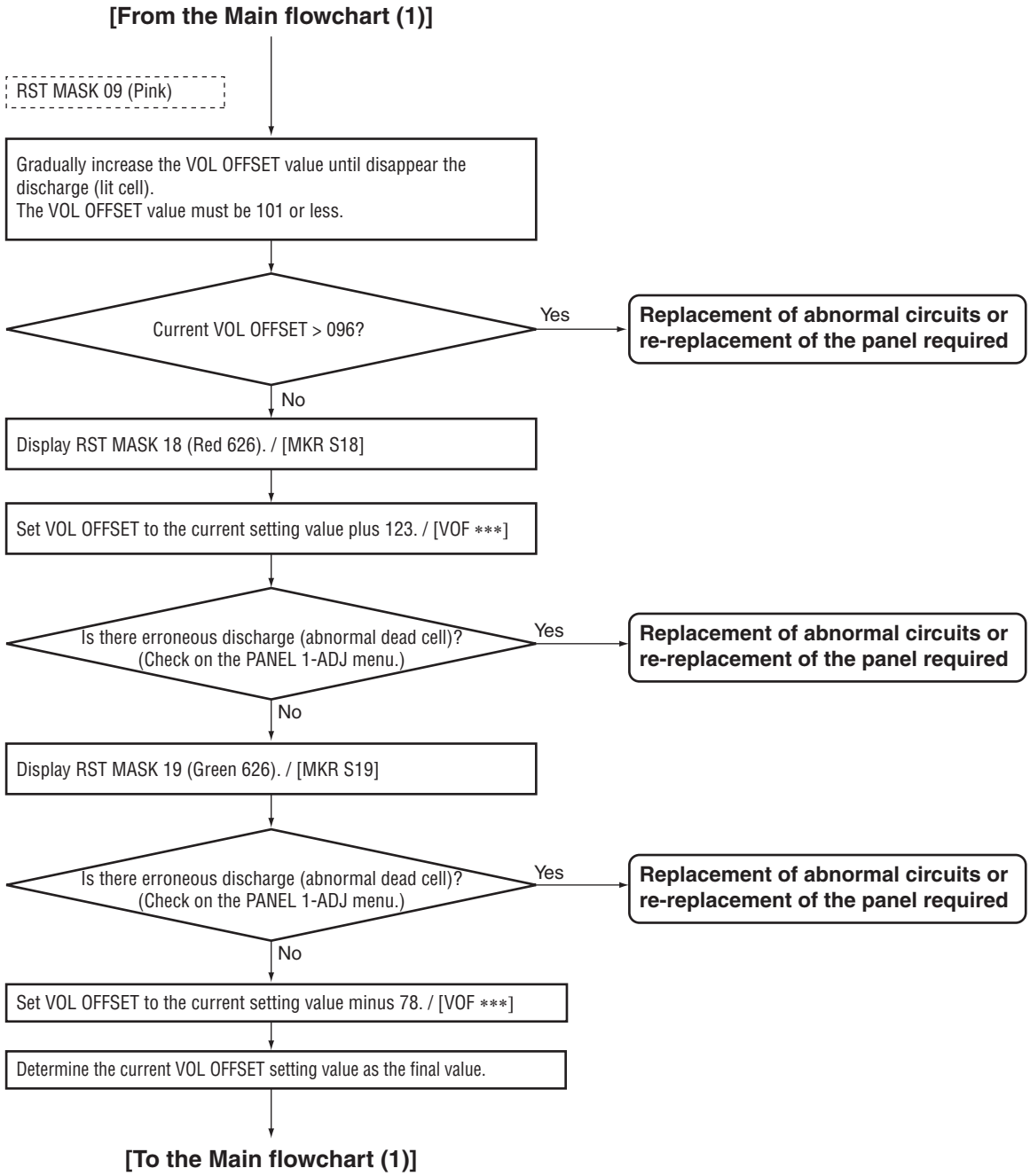

[From the Main flowchart (1)]
Display RST MASK 21 (Red 1023+). / [MKR S21]
Set VOL YNOFSA D to the tentative setting value 103. / [VYF 103]
Is there erroneous discharge (abnormal dead cell)? (Check on the PANEL 1-ADJ menu.)
Yes
To the Recovery flowchart (2-1)
No
Display RST MASK 22 (Green 1023+). / [MKR S22]
Is there erroneous discharge (abnormal dead cell)? (Check on the PANEL 1-ADJ menu.)
Yes
To the Recovery flowchart (2-2)
No
Display RST MASK 15 (Magenta 120). / [MKR S15]
Set VOL YNOFSA D to the tentative setting value 151. / [VYF 151]
Is there erroneous discharge (abnormal lit cell)? (Check on the PANEL 1-ADJ menu.)
Yes
To the Recovery flowchart (2-3)
No
Return the VOL YNOFSA D to the tentative setting value 128. / [VYF 128]
Determine the tentative setting value for VOL YNOFSA D as the final value.
From the Recovery flowchart (2-2) and (2-3)
[Adjustment completed]

Note:
Make sure that the following values become the final setting values.

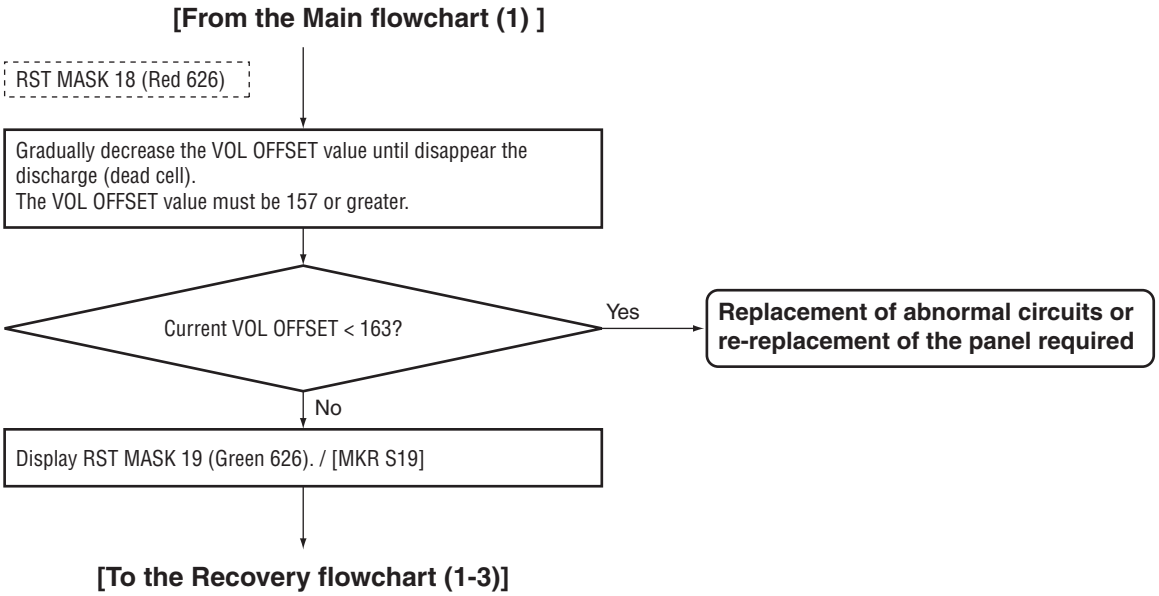
VOL SUS *1	VOL XPOSF2 *1
VOL OFFSET	VOL YNOFS1 D *1
VOL RST P *1	VOL YNOFS3 D *1
VOL XPOFS1 *1	VOL YNOFS4 D *1
	VOL YNOFS4 A

*1: The tentative setting value becomes the final value.

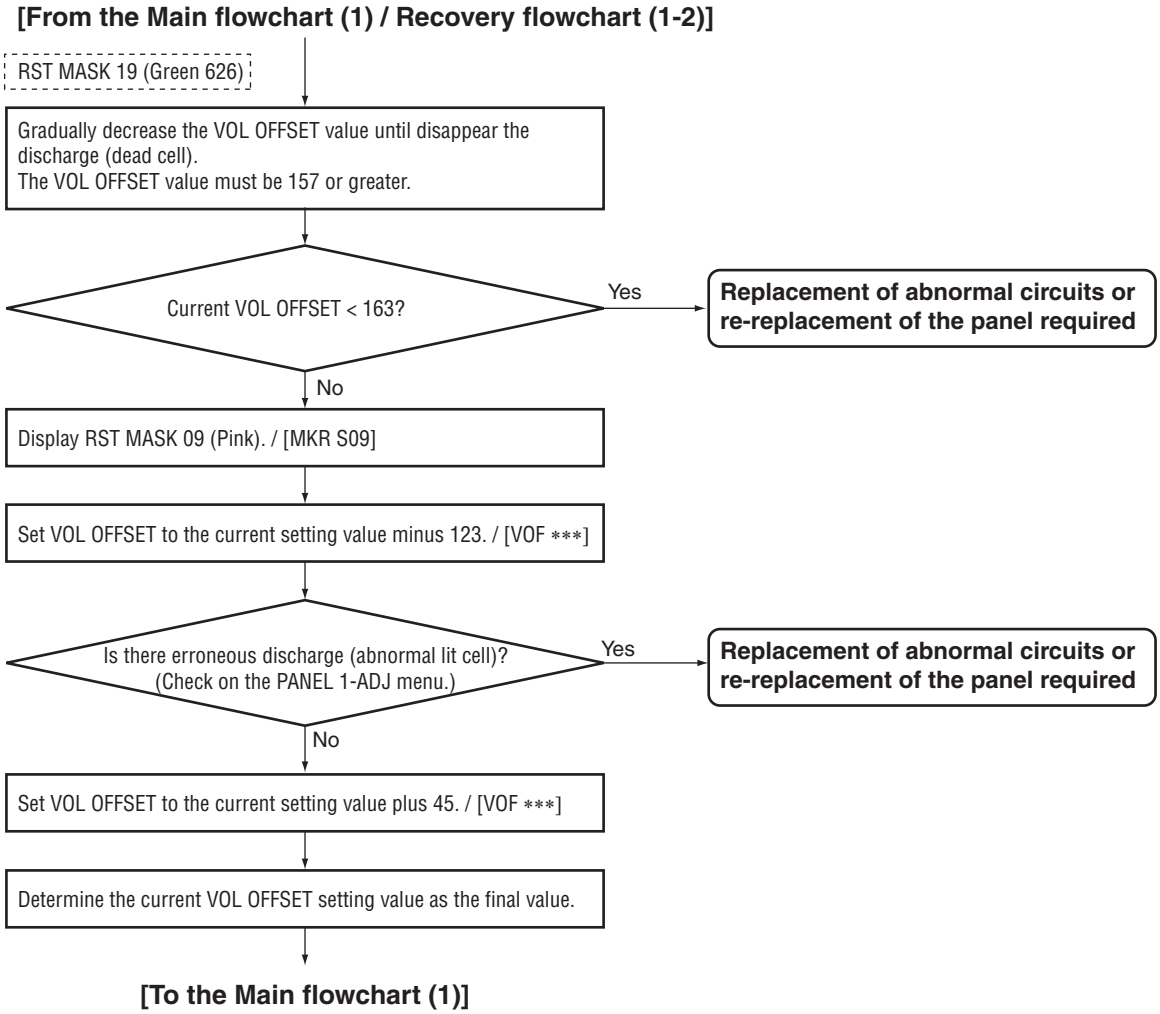
Recovery flowchart (1-1)...Changing the VOL OFFSET setting


[From the Main flowchart (1)]
RST MASK 09 (Pink)
Gradually increase the VOL OFFSET value until disappear the discharge (lit cell).
The VOL OFFSET value must be 101 or less.
Current VOL OFFSET > 096?
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Display RST MASK 18 (Red 626). / [MKR S18]
Set VOL OFFSET to the current setting value plus 123. / [VOF ***]
Is there erroneous discharge (abnormal dead cell)? (Check on the PANEL 1-ADJ menu.)
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Display RST MASK 19 (Green 626). / [MKR S19]
Is there erroneous discharge (abnormal dead cell)? (Check on the PANEL 1-ADJ menu.)
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Set VOL OFFSET to the current setting value minus 78. / [VOF ***]
Determine the current VOL OFFSET setting value as the final value.
[To the Main flowchart (1)]

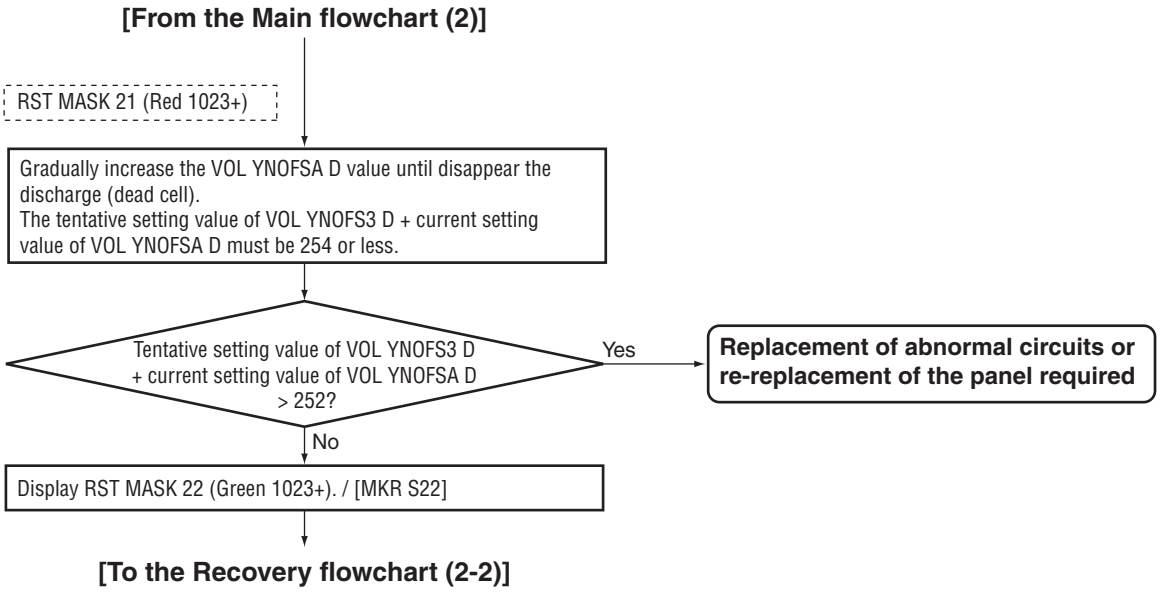
Recovery flowchart (1-2)...Changing the VOL OFFSET setting


[From the Main flowchart (1)]
RST MASK 18 (Red 626)
Gradually decrease the VOL OFFSET value until disappear the discharge (dead cell).
The VOL OFFSET value must be 157 or greater.
Current VOL OFFSET < 163?
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Display RST MASK 19 (Green 626). / [MKR S19]
[To the Recovery flowchart (1-3)]

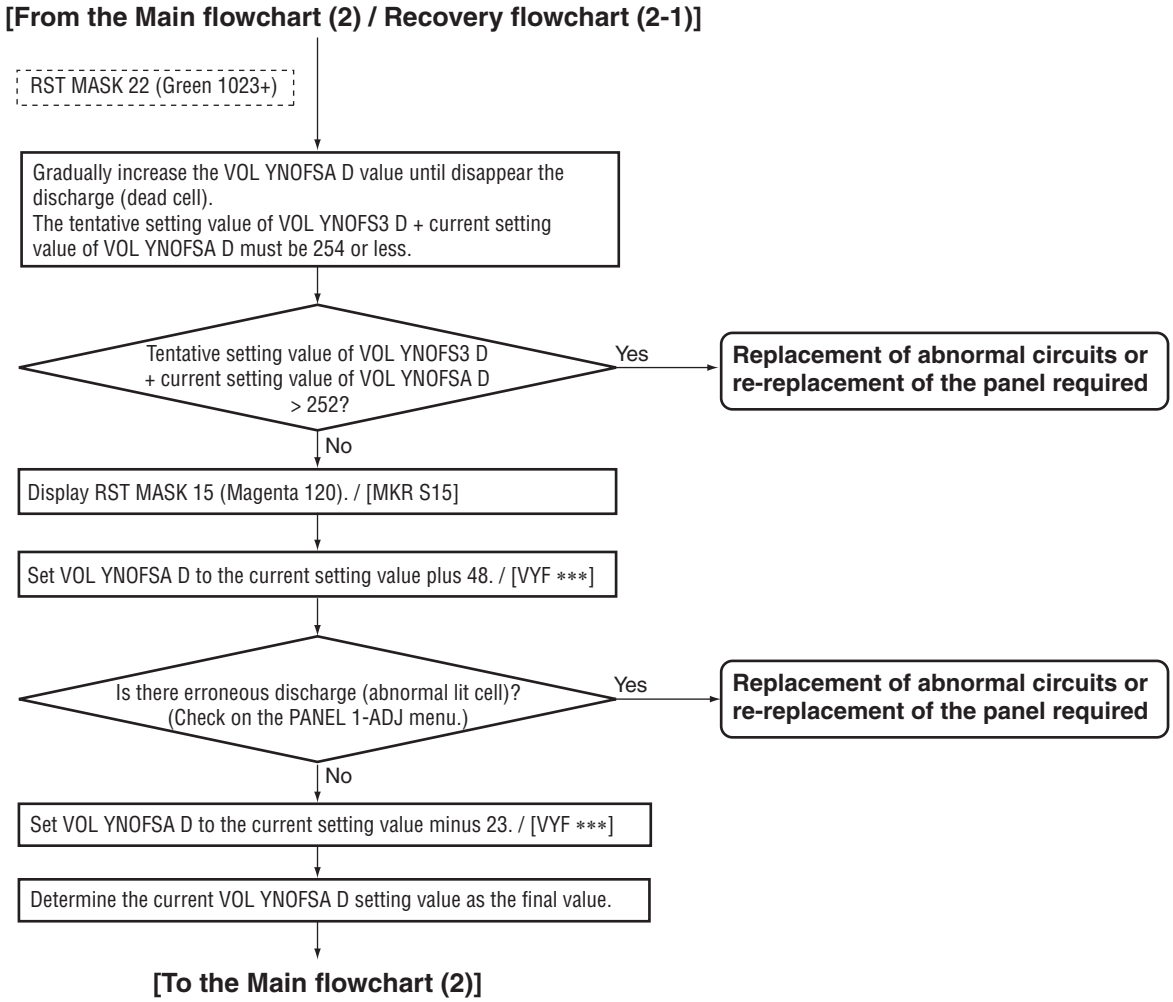
Recovery flowchart (1-3)...Changing the VOL OFFSET setting


[From the Main flowchart (1) / Recovery flowchart (1-2)]
RST MASK 19 (Green 626)
Gradually decrease the VOL OFFSET value until disappear the discharge (dead cell).
The VOL OFFSET value must be 157 or greater.
Current VOL OFFSET < 163?
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Display RST MASK 09 (Pink). / [MKR S09]
Set VOL OFFSET to the current setting value minus 123. / [VOF ***]
Is there erroneous discharge (abnormal lit cell)? (Check on the PANEL 1-ADJ menu.)
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Set VOL OFFSET to the current setting value plus 45. / [VOF ***]
Determine the current VOL OFFSET setting value as the final value.
[To the Main flowchart (1)]

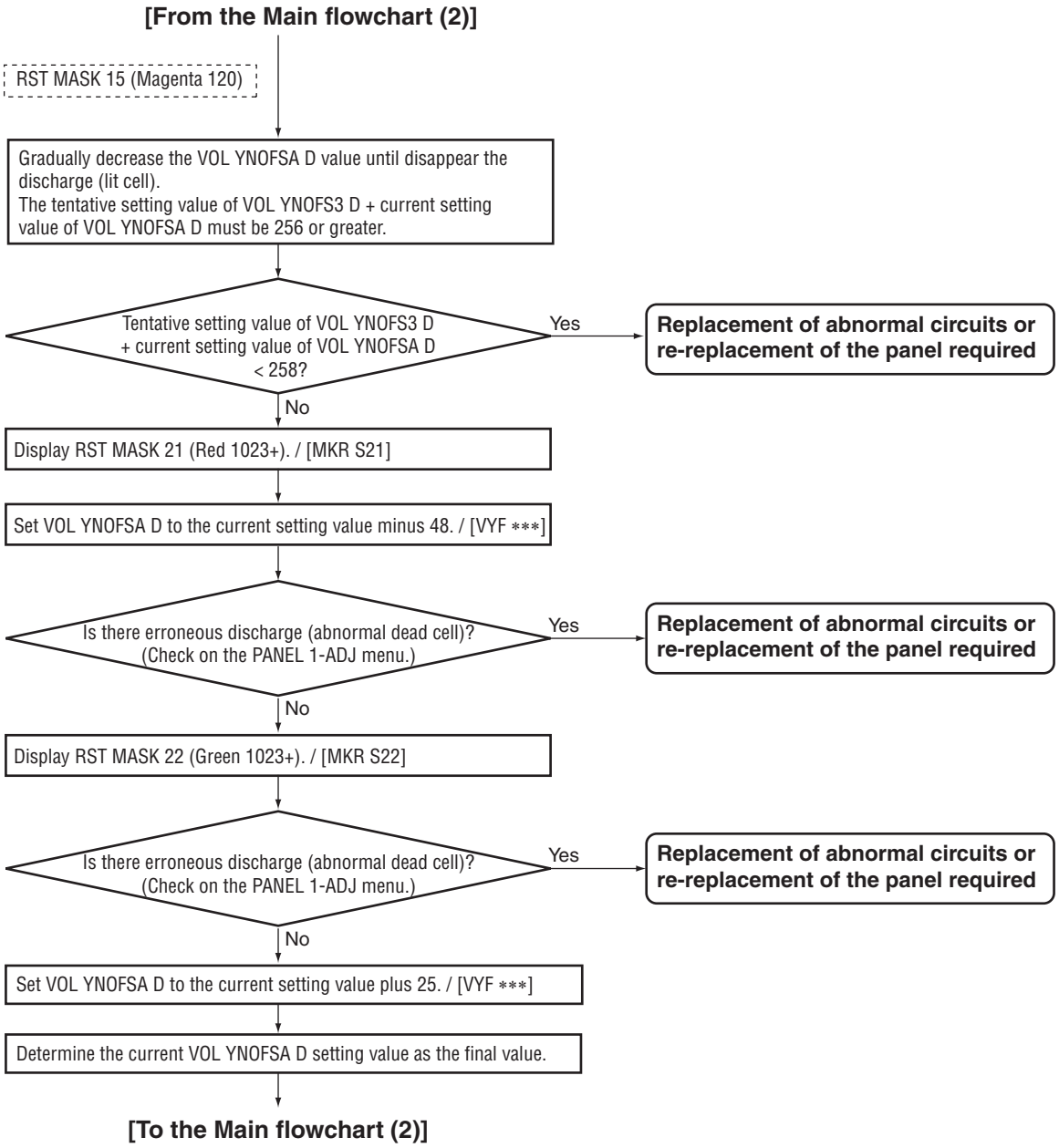
Recovery flowchart (2-1)...Changing the VOL YNOFSA D setting


[From the Main flowchart (2)]
RST MASK 21 (Red 1023+)
Gradually increase the VOL YNOFSA D value until disappear the discharge (dead cell).
The tentative setting value of VOL YNOFS3 D + current setting value of VOL YNOFSA D must be 254 or less.
Tentative setting value of VOL YNOFS3 D + current setting value of VOL YNOFSA D > 252?
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Display RST MASK 22 (Green 1023+). / [MKR S22]
[To the Recovery flowchart (2-2)]

Recovery flowchart (2-2)...Changing the VOL YNOFSA D setting


[From the Main flowchart (2) / Recovery flowchart (2-1)]
RST MASK 22 (Green 1023+)
Gradually increase the VOL YNOFSA D value until disappear the discharge (dead cell).
The tentative setting value of VOL YNOFS3 D + current setting value of VOL YNOFSA D must be 254 or less.
Tentative setting value of VOL YNOFS3 D + current setting value of VOL YNOFSA D > 252?
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Display RST MASK 15 (Magenta 120). / [MKR S15]
Set VOL YNOFSA D to the current setting value plus 48. / [VYF ***]
Is there erroneous discharge (abnormal lit cell)? (Check on the PANEL 1-ADJ menu.)
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Set VOL YNOFSA D to the current setting value minus 23. / [VYF ***]
Determine the current VOL YNOFSA D setting value as the final value.
[To the Main flowchart (2)]

Recovery flowchart (2-3)...Changing the VOL YNOFSA D setting


[From the Main flowchart (2)]
RST MASK 15 (Magenta 120)
Gradually decrease the VOL YNOFSA D value until disappear the discharge (lit cell).
The tentative setting value of VOL YNOFS3 D + current setting value of VOL YNOFSA D must be 256 or greater.
Tentative setting value of VOL YNOFS3 D + current setting value of VOL YNOFSA D < 258?
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Display RST MASK 21 (Red 1023+). / [MKR S21]
Set VOL YNOFSA D to the current setting value minus 48. / [VYF ***]
Is there erroneous discharge (abnormal dead cell)? (Check on the PANEL 1-ADJ menu.)
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Display RST MASK 22 (Green 1023+). / [MKR S22]
Is there erroneous discharge (abnormal dead cell)? (Check on the PANEL 1-ADJ menu.)
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Set VOL YNOFSA D to the current setting value plus 25. / [VYF ***]
Determine the current VOL YNOFSA D setting value as the final value.
[To the Main flowchart (2)]

6. EXPLODED VIEWS AND PARTS LIST

EXPLODED VIEWS AND PARTS LIST for PDP-LX509A/YP1 is the same as YP except for the following:

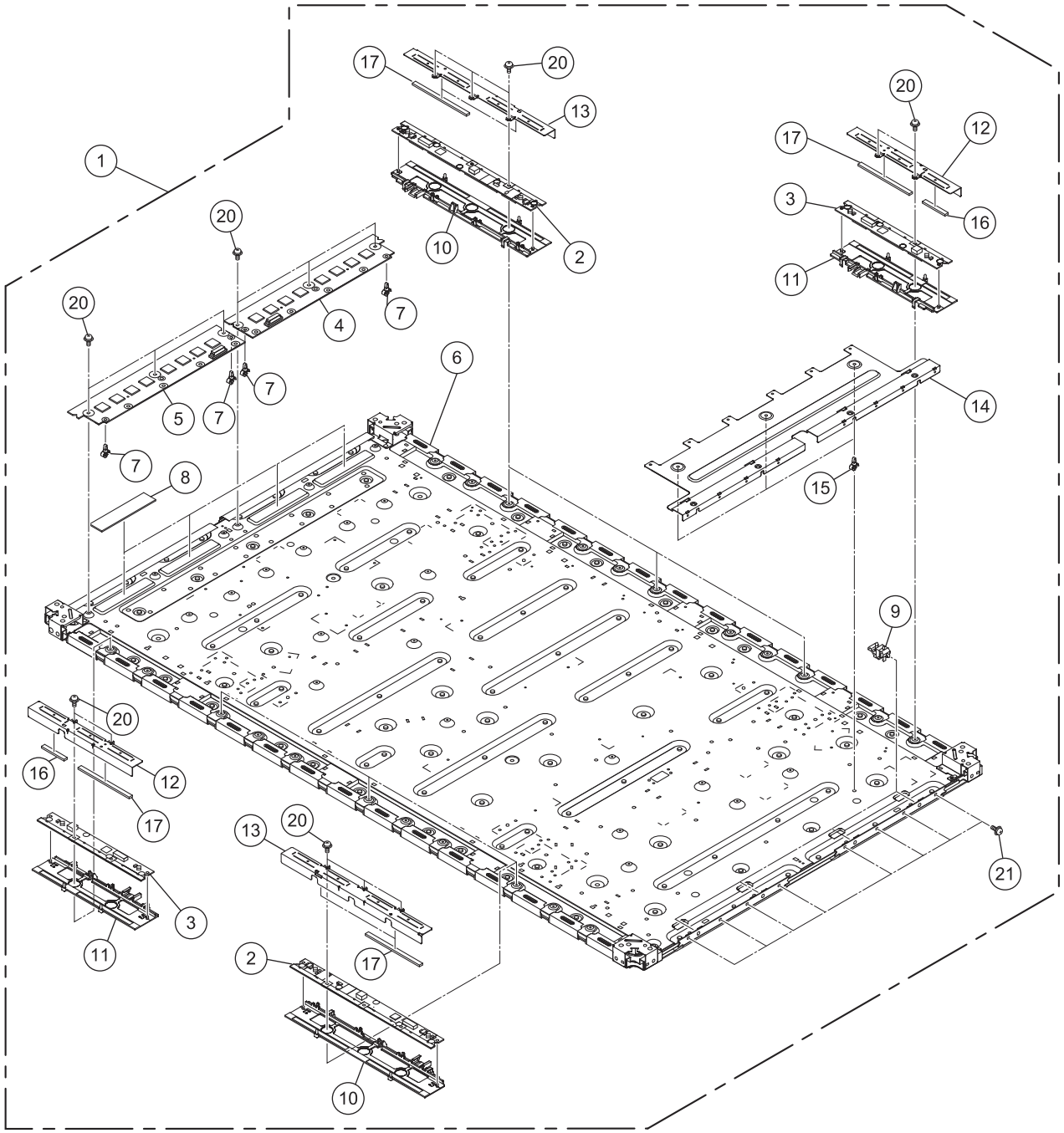
NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on product are used for disassembly.*
- *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*
- *Nos. indicate the pages and Nos. in the service manual for the base model.*

6.1 CHASSIS SECTION (2/2)

PDP-LX509A/YP and YP1 are constructed the same except for the following:

Mark	No.	Symbol and Description	PDP-LX509A/YP	PDP-LX509A/YP1	Remarks
	P185-2	50F DIGITAL Assy	AWW1347	AWW1368	

6.2 PANEL CHASSIS SECTION



(1) PANEL CHASSIS SECTION PARTS LIST

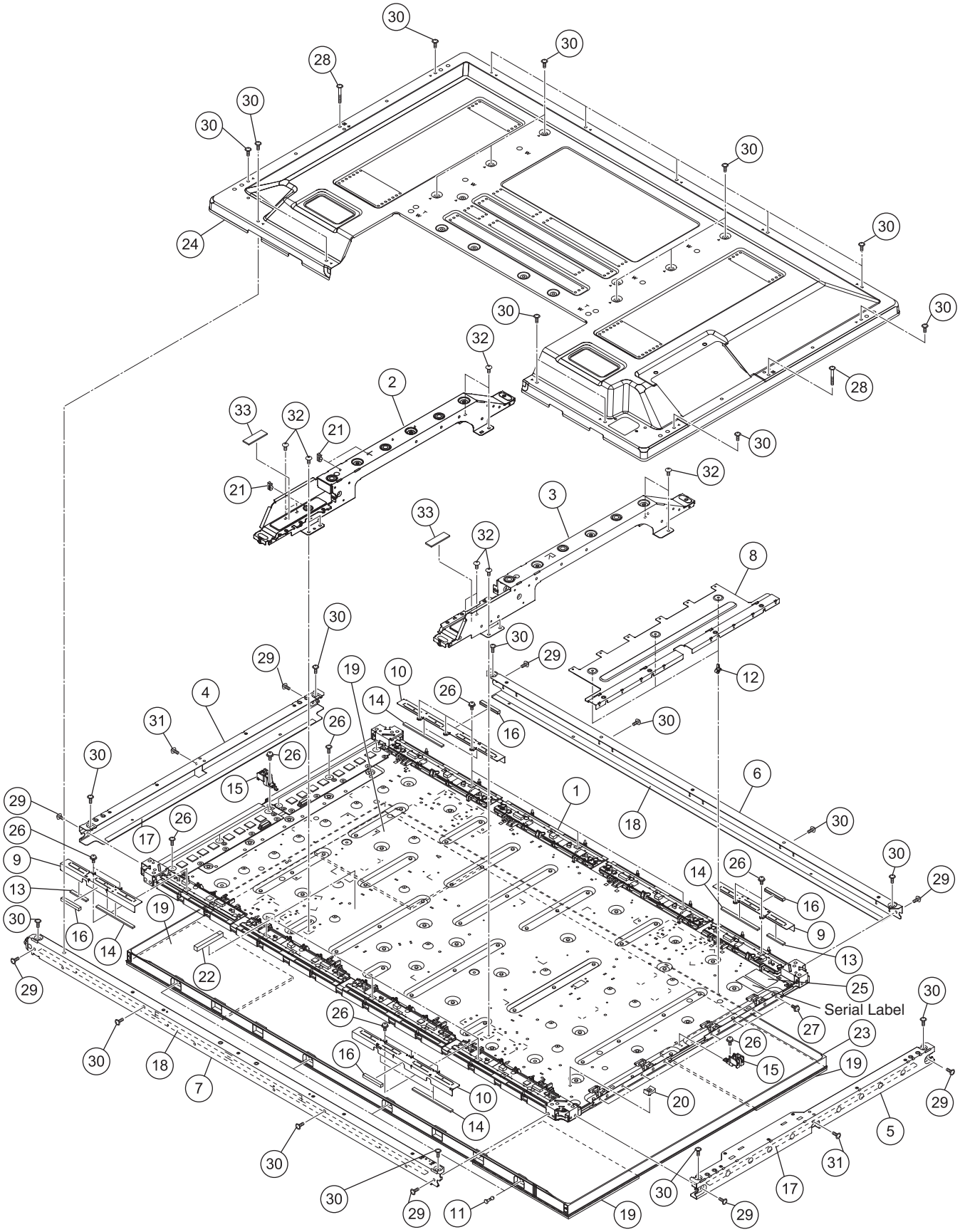
Mark	No.	Description	Part No.
NSP	1	P. Chassis (509FE) Assy	AWU1369
NSP	2	50F ADDRESS L Assy	AWW1348
NSP	3	50F ADDRESS S Assy	AWW1349
NSP	4	50F SCAN A Assy	AWW1350
NSP	5	50F SCAN B Assy	AWW1351
NSP	6	P. Panel (50FE) Assy	AWU1349
	7	Reuse PCB Spacer 4.5	AEC2148
	8	Heat Radiation Sheet	AEH1134
	9	Plate Holder	AMR3757
	10	Holder L Assy (509)	AMR3775
	11	Holder S Assy (509)	AMR3776
	12	Address Plate S (509)	ANG3129
	13	Address Plate L (509)	ANG3130
	14	Plate X (509)	ANG3128
	15	PCB Spacer (Reuse)	AEC2122
	16	Address Silicon TS	AEH1160
	17	Address Silicon TL	AEH1161
	18	•••••	
	19	•••••	
	20	Screw	ABA1351
	21	Screw	ABA1364

6.3 PDP SERVICE ASSY

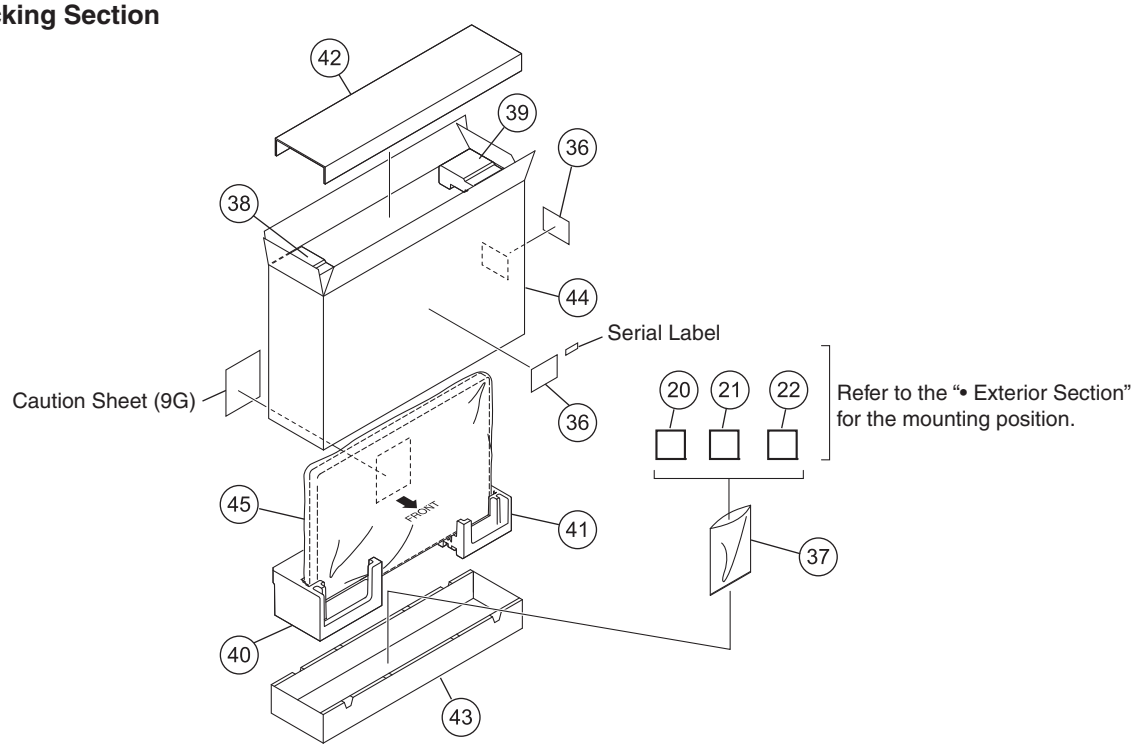
PDP SERVICE ASSY 509FE : AWU1367

	YP	YP1
PDP SERVICE ASSY	AWU1342	AWU1367

● **Exterior Section**



● Packing Section



PDP SERVICE ASSY PARTS LIST

Mark	No.	Description	Part No.
NSP	1	P. Chassis (509FE) Assy	AWU1369
	2	Sub Frame L Assy (50)	ANA2137
	3	Sub Frame R Assy (50)	ANA2140
	4	F. Chassis VL Assy 50	ANA2142
	5	F. Chassis VR Assy 50	ANA2151
	6	F. Chassis HT Assy 50	ANA2144
	7	F. Chassis HB 50	ANA2188
	8	Plate X (509)	ANG3128
	9	Address Plate S (509)	ANG3129
	10	Address Plate L (509)	ANG3130
	11	Rivet (Plastic)	AEC1877
	12	PCB Spacer (Reuse)	AEC2122
	13	Address Silicon TS	AEH1160
	14	Address Silicon TL	AEH1161
	15	Support Bracket	AMR3762
	16	Gasket ADH-FCH	ANK1850
	17	Front Gasket V50	ANK1963
	18	Front Gasket H50	ANK1964
	19	Service Pad	AEC2105
	20	Ferrite Core Holder	AEC1818
	21	Wire Clip	AEC1948
	22	Gasket (10 x 10 x 80)	ANK1974
NSP	23	Front Service Assy (509)	AMB3103
	24	Rear Case (509)	ANE1671
NSP	25	Drive Voltage Label	ARW1097

Mark	No.	Description	Part No.
	26	Screw	ABA1351
	27	Screw	ABA1364
	28	Screw (3 x 25 P)	ABA1380
	29	Screw	ABZ30P080FTC
	30	Screw	AMZ30P060FTB
	31	Screw	APZ30P080FTB
	32	Screw	TBZ40P060FTC
	33	Stand Cushion	AED1340
	34	•••••	
	35	•••••	
	36	Caution Label	AAX3031
	37	Vinyl Bag	AHG1338
	38	Pad (509 T-L EU)	AHA2727
	39	Pad (509 T-R EU)	AHA2728
	40	Pad (509 B-L EU)	AHA2729
	41	Pad (509 B-R EU)	AHA2730
	42	Carton Board (509)	AHB1303
	43	Under Carton (5090)	AHD3673
	44	Upper Carton (509F-SV)	AHD3716
	45	Protect Sheet	AHG1331

7. PCB PARTS LIST

PCB PARTS LIST for PDP-LX509A/YP1 is the same as YP except for the following:

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47 k ohm (tolerance is shown by J = 5%, and K = 10%).

560 Ω	→	*56 × 10¹*	→	*561* ····· *RD1/4PU 5 6 1 J*
47 kΩ	→	*47 × 10³*	→	*473* ····· *RD1/4PU 4 7 3 J*
0.5 Ω	→	*R50*		····· *RN2H R 5 0 K*
1 Ω	→	*1R0*		····· *RS1P 1 R 0 K*

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62 kΩ	→	*562 × 10¹*	→	*5621* ····· *RN1/4PC 5 6 2 1 F*

- *Meaning of the figures and others in the parentheses in the parts list.*

Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.
IC 301 (A, 91, 111) IC NJM2068V

Unit Name: 50F DIGITAL ASSY (AWW1368)

Block Name: MAIN I/F BLOCK

Mark	No.	Description	Part No.
SEMICONDUCTORS			
Q	3201		RN1901
MISCELLANEOUS			
⚠ L	3201	CHIP BEEDS FILTER	BTX1042
CN	3201	50P CONNECTER	AKM1399
CN	3202	40P CONNECTER	AKM1398
CN	3203	6PIN CONNECTOR	AKM1405
	3202	HEAT SINK B	ANH1645
	3203	THERMAL SHEET B	AEB1417
RESISTORS			
R	3201-3207,3211-3218		RAB4CQ100J
Other Resistors			RS1/16SS###J
CAPACITORS			
C	3201		ACG1150
C	3202		CKSSYB102K50
C	3203		CCSSCH101J50

Block Name: SQ ASIC BLOCK

Mark	No.	Description	Part No.
SEMICONDUCTORS			
IC	3301		PEG383B
IC	3303		TC7SH08FUS1
IC	3304		TC7SH32FUS1
MISCELLANEOUS			
⚠ L	3301,3302	CHIP BEEDS FILTER	BTX1042
⚠ L	3303	CHIP BEEDS FILTER	BTX1039
⚠ L	3304-3307	CHIP BEEDS FILTER	BTX1042
⚠ X	3301	CRYSTAL (27 MHz)	ASS1215
CN	3301	CONNECTOR	CKS4835
RESISTORS			
R	3302,3307-3310		RAB4CQ101J
R	3306,3386		RAB4CQ103J
R	3313		RS1/16SS1000F
R	3314-3319		RAB4CQ100J
R	3321-3325		RAB4CQ470J
R	3332-3338,3344-3346		RAB4CQ220J
R	3351-3359,3361-3367		RAB4CQ220J
R	3371-3377		RAB4CQ220J
Other Resistors			RS1/16SS###J
CAPACITORS			
C	3301-3306,3309,3310		CKSSYB104K10
C	3307,3311,3331-3334		ACG1150
C	3312-3330,3335,3336		CKSSYB104K10
C	3337		CCSRCH471J50
C	3338,3340		ACG1149
C	3339,3341,3342		CKSSYB104K10
C	3343		ACG1150
C	3345-3355,3357-3386		CKSSYB104K10
C	3356,3392		CCSRCH470J50
C	3387-3389		CKSRYB105K6R3
C	3390,3391,3393-3395		CKSSYB104K10

Block Name: LVDS TX BLOCK 50

Mark	No.	Description	Part No.
SEMICONDUCTORS			
IC	3401		PEG478A
MISCELLANEOUS			
⚠ L	3401-3407	CHIP BEEDS FILTER	BTX1042
RESISTORS			
R	3401		RS1/16SS5601F
R	3496		RS1/10SR221J
Other Resistors			RS1/16SS###J
CAPACITORS			
C	3401,3402		ACG1149
C	3403-3410,3415-3420		CKSSYB104K10
C	3411,3413,3421,3435		ACG1150
C	3423-3434,3436-3442		CKSSYB104K10
C	3443,3499		ACG1150
C	3444-3448,3451-3457		CKSSYB104K10

Block Name: ADDRESS CN BLOCK

Mark	No.	Description	Part No.
SEMICONDUCTORS			
Q	3501,3504		DTC143EUA
Q	3502,3503,3506,3508		RN1901
D	3501-3504		DAN202U

Mark	No.	Description	Part No.
MISCELLANEOUS			
	CN	3501-3508,3510 26P CONNECTER	AKM1397
	CN	3509 50P CONNECTER	AKM1399
RESISTORS			
	R	3502,3504,3507	RAB4CQ101J
	R	3503,3505	RAB4CQ102J
		Other Resistors	RS1/16SS###J
CAPACITORS			
	C	3501-3508,3510-3512	CKSSYB102K50
	C	3514,3516,3518-3520	CKSSYB102K50
Block Name: MODEULE UCOM BLOCK			
SEMICONDUCTORS			
	IC	3602	BR24L04FJ-W
	IC	3604	TC74VHC08FTS1
	IC	3605	MB88347LPFV-GBND
	IC	3607	TC74VHC123AFTS1
	IC	3608	TC74VHC126FTS1
	IC	3609,3610	TC74LCX541FTS1
	IC	3611	PST3628UR
	Q	3602	2SJ461A
	Q	3604	RN1902
	D	3601-3604	DAN202U
	D	3606-3608,3612	1SS352
	D	3609,3611	SML-310MT
	D	3610	SML-D12V8W
MISCELLANEOUS			
⚠	X	3601 CERAMIC OSCILLATOR	CSS1616
	CN	3601 5PIN CONNECTOR	AKM1418
	CN	3602,3603 CONNECTOR	CKS4828
RESISTORS			
	R	3603,3608	RAB4CQ222J
	R	3604,3607	RAB4CQ101J
	R	3606,3615	RAB4CQ470J
	R	3639,3666	RAB4CQ103J
		Other Resistors	RS1/16SS###J
CAPACITORS			
	C	3601,3603-3606	CKSSYB104K10
	C	3602,3615,3635,3636	CCSSCH101J50
	C	3608-3612,3614,3618	CKSSYB104K10
	C	3619	CKSRYB103K50
	C	3620-3622	CKSRYB105K6R3
	C	3630	CKSSYB104K10
	C	3631	CKSRYB472K50
	C	3632-3634	CKSSYB102K50
Block Name: DD CON BLOCK			
SEMICONDUCTORS			
	IC	3801	BD8606FV
	IC	3802	TC74VHC08FTS1
	IC	3803	S-1170B18UC-OTD
	IC	3804	BD12KA5WFP
	IC	3805	PST3628UR
	IC	3808	PQ200WNA1ZPH
	Q	3801,3803	DTC144EUA
	Q	3802	RN1901
	Q	3804	DTC143EUA
	Q	3841,3861,3881	SP8M4

Mark	No.	Description	Part No.
	D	3801,3802,3882	1SS352
	D	3841,3861,3881	RB060M-30
MISCELLANEOUS			
⚠	L	3801 CHIP BEEDS FILTER	BTX1039
⚠	L	3841,3881 INDUCTOR	ATH1235
⚠	L	3861 INDUCTOR	BTH1110
	CN	3801 10PIN CONNECTOR	AKM1409
	CN	3802 CONNECTOR	AKM1277
	FU	3801 CHIP FUSE	AEK1087
RESISTORS			
	R	3801,3802	RAB4CQ101J
	R	3815	RS1/10SR4301D
	R	3816	RS1/10SR1301D
	R	3828	RS1/10SR2702D
	R	3832	RS1/10SR221J
	R	3836	RS1/16SS2202F
	R	3837,3838	RS1/16SS3901F
	R	3841,3843,3863	RS1/10SR3302D
	R	3844	RS1/10SR4702D
	R	3845	RS1/10SR2002D
	R	3861	RS1/10SR1503D
	R	3862,3882	RS1/10SR3001D
	R	3864,3883	RS1/10SR3902D
	R	3865	RS1/10SR1003D
	R	3881	RS1/10SR1203D
	R	3885	RS1/10SR7502D
		Other Resistors	RS1/16SS###J
CAPACITORS			
	C	3801-3804,3808,3821	CKSSYB102K50
	C	3805,3806	CKSSYB104K10
	C	3807	CKSRYB472K50
	C	3809	CKSRYB104K16
	C	3810,3811,3841,3842	ACG1150
	C	3812,3814,3824	CKSRYB105K6R3
	C	3813,3815,3843,3847	ACG1149
	C	3817,3825,3826	DCH1165
	C	3818	CCSSCH101J50
	C	3820,3844	CCSRCH221J50
	C	3845,3888	CKSRYB682K50
	C	3848	CKSRYB153K50
	C	3861,3862,3881,3882	ACG1150
	C	3863,3867,3883,3887	ACG1149
	C	3864	CCSRCH470J50
	C	3865	CKSRYB152K50
	C	3868	CKSRYB103K50
	C	3884	CCSRCH620J50
	C	3885	CKSRYB182K50